ROYAL STATISTICAL SOCIETY
25 JUN.1900

P P

BOROUGH OF PRESTON.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

TO THE

URBAN AND PORT SANITARY AUTHORITIES,

FOR THE

Year ending December 31st, 1899.

H. O. PILKINGTON,
Medical Officer of Health,
Medical Officer to the Port Sanitary Authority.

ROYAL STATISTICAL SOCIETY
25 JUN 1909

P P

BOROUGH OF PRESTON.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

TO THE

URBAN AND PORT SANITARY AUTHORITIES,

FOR THE

Year ending December 31st, 1899.

H. O. PILKINGTON,
Medical Officer of Health,
Medical Officer to the Port Sanitary Authority.

Digitized by the Internet Archive
in 2018 with funding from
Wellcome Library

https://archive.org/details/b29998001

Report of the Medical Officer of Health.

TO THE CHAIRMAN AND MEMBERS OF THE URBAN AND PORT SANITARY COMMITTEES.

Gentlemen,

Although I am unable to commence the present Report with a statement as satisfactory as that which formed the preface to the one for 1898, viz., that the death rate was absolutely the lowest upon record—still I am able to report a low one, a rate indeed which has only on four previous occasions been either equalled or excelled.

As will be seen from the analysis of the causes of death, the fatality from Summer Diarrhœa was as severe as in former years, while the mortality from the other diseases peculiar to early life, again added largely to the general list.

A fresh importation of Measles was made into the town, with the result that numerous deaths occurred from this cause during the latter part of the year, whilst the effects of the epidemic are still very apparent at the present time of writing.

But the most unusual feature, and one therefore having more than common interest, was the outbreak of Diphtheria, which first showed itself towards the end of the year, and in the neighbourhood of Avenham Lane.

All these subjects will however be dealt with in their usual order, the present Report being drawn up on the same lines as those adopted in previous years.

Commencing with Small Pox, it is satisfactory to be able to record that for another year the town has remained unvisited by a single case, and with the exception of an outbreak in Hull, and a very few cases in London and Liverpool, the whole country has now for some years past been remarkably free from this disease.

The strict vigilance exercised by the Sanitary Authorities of our various Ports does much to prevent its introduction by foreign going vessels, whilst the almost universal provision of hospital accommodation in Rural and Urban Districts furnishes the best means for preventing the spread of infection, should the disease be either imported from abroad or simply conveyed from one inland district to another. Although it may be said that no severe outbreak has occurred since the recent alteration in the Vaccination Laws, the gradual disregard of this most efficient means of prevention, in many parts of the country, means simply the preparation of so much suitable material for the reception of the poison, with the result that before very long a severe example of the folly of this course will almost certainly be shown, but shown when too late except to act as a warning to the general public. As already pointed out, Hull was the only town which during the past year suffered to any extent from Small Pox, but though the outbreak was enough to cause some alarm and anxiety, it was from the first kept under control, and the mortality from this cause was hardly sufficient to exercise any appreciable effect upon the death rate.

We still retain, in efficient working condition, the Small Pox Hospital, originally erected in Moor Park for the purpose of dealing with the severe epidemic of 1888-89, but which was afterwards removed to its present site on Corporation property in Holme Slack. Originally designed as a temporary structure, to be taken down and again put up when required, its conversion into a permanent building, exposed to all kinds of weather throughout the year, has necessitated much care and attention in order to maintain it in a serviceable condition ; but even with all this, although at present in an effective state, its term of life cannot be a very long one.

Typhoid Fever was the cause of 37 deaths, a number below that of the preceding year, and allowing for increase of population, about equal to the average of the past few years. The case mortality, i.e. the percentage of deaths to the reported cases of sickness, was lower than usual ; certificates being received of 223 separate cases, to which the deaths stood in the relation of 16·59 per cent.

Since in some instances a second, or still more rarely a third, patient was affected in the same house, about whom no notification would be received, the actual percentage of mortality would stand even lower than this. Compared with the population, the mortality rate from this disease was 0·33 per thousand, and was exceeded in about seven of the other large towns.

St. John's, Fishwick, and St. Peter's Wards showed the greatest number of fatal cases, followed by Maudland, Park, and Christ Church wards in the order named.

Scarlet Fever first showed itself towards the middle of the year, after a long period of almost complete immunity, and though it continued present, with a tendency to increasing numbers, up to the close of the year, the type of disease was remarkably mild, and only 11 deaths, all under the age of ten years, resulted from this cause. Indeed the universally benign character of the outbreak is conclusively shown by the fact that the deaths only formed 3·51 per cent. of the reported cases, while the mortality rate per thousand—0·09—is considerably below the average of the other large towns.

Measles was the direct cause of 41 deaths, of which all with one exception occurred in the last two months of the year. It may be remembered that the town was visited by a severe outbreak in 1897, so that the present epidemic, which although improving is by no means over, may be looked upon as occurring somewhat before its time. Because outbreaks of such a disease as Measles as a rule visit most large towns in regular cycles, and since Preston suffered pretty severely in 1897, it might have been expected that the town would have remained free for at any rate another twelve months.

In June the infection was introduced by a family of tramps, but the precautions taken resulted in its being confined to a short series of cases, with one death. Probably the outbreak which occurred towards the close of the year, was due to a fresh importation of infective material, since the disease was then rife in many of the neighbouring towns.

Although only present during the last two months of the year, Measles caused a death rate equal to 0·37 per thousand, but this was considerably exceeded in many of the neighbouring towns, notably in Manchester, Salford, and Burnley. Since the epidemic had not attained anything like its zenith at the end of the year, its history, and the effect which it had—and is still having—upon the death rate will be appropriately dealt with in the Report for the current twelve months.

Departing from the order in which the causes of death are arranged in the weekly sheets of mortality, I deal next with Diphtheria, since this is a disease which may be fittingly grouped with Small Pox, Measles, and the other Infectious Fevers.

In former Reports I have referred to the comparative freedom which the town has enjoyed from this severe—and so frequently fatal—disease, and nothing occurred during the past year to require any alteration in this statement, until the end of June, when the appearance of a number of cases in one quarter of the town, pointed to an outbreak which in Preston, at any rate, is not of common occurrence. A few sporadic cases had cropped up in the earlier months, resulting in a total of 4 deaths; but during the four weeks ending July 15th, notification was received of 15 cases of sickness, while 4 deaths were recorded in the same period. In every instance a careful examination was made in order to ascertain, if possible, the source of infection, and while in some cases it was evident that the disease had been carried from one house to another, in others there was good reason for supposing that it had been contracted at school from children who were themselves either commencing with illness, or who resided in houses in which the disease was present.

During the following two months, numerous fresh cases of Diphtheria came under observation, which, though not entirely confined to the locality first affected, were, in the majority of instances, situated at no great distance. All of those affected were quite young, and of the deaths recorded at this period, something like two thirds were those of infants under the age of twelve months.

During October and November there was a diminution both in the sickness and mortality from Diphtheria, but before the close of the year a return wave occurred, which was followed by 12 deaths in December, the cases having now become more generally spread over the town, though, at this period, Fishwick Ward was the locality which suffered most severely, contributing 5 deaths to the total mortality.

Altogether, 116 cases of Diphtheria were reported throughout the year, and of these 36 terminated fatally, so that the per centage of mortality to the notified cases of sickness, was 31·03 per cent, while the mortality rate was 0·33 per thousand of the population.

As regards the unusual prevalence of Diphtheria during the year 1899, Preston by no means holds a unique position, since, in many of the large towns and rural districts, the year was remarkable from the large amount both of sickness and mortality from this cause. Sheffield was especially affected throughout the whole year, as, indeed, it had been for some time previously, and the Diphtheritic death rate in that town—1·27—was only exceeded in Swansea; although Leicester showed a rate much above that of the average of the other large towns.

Although, as I have said, in certain instances the infection could be traced to contact with a previous case of illness, in many no definite cause could be discovered. The absence of any special insanitary condition in many of the houses affected, and the general prevalence of the disease throughout the country, would seem to point to some cause of a wide reaching character, but as yet, undiscovered. In addition to the careful examination of each house in which sickness occurred, and its disinfection after recovery or death, I had the streets in which the disease was chiefly located, well watered with a strong disinfectant solution; while the schools in the infected neigbourhoods were also fumigated and thoroughly cleansed.

The simultaneous appearance of Measles, Scarlet Fever, and Diphtheria, combined with Influenza, and the Catarrhs inseparable from the winter season, naturally exercised a strong adverse influence upon the attendance of children at many of the Elementary Schools, and the question as to the expediency of closing several of them was, at different times, forcibly brought before my notice. I still hold to the opinion that in a large town no good result can follow this line of action, since it is never suggested that it should be put in force until the epidemic—whatever it may be—has attained, or nearly attained its maximum point; and then the intercommunication of children in the streets, and from house to house, has an equal, if not a greater, effect in spreading infection, than if, under proper restriction, they were allowed to continue their usual attendance at school. I say "under proper restriction" because I believe that a good deal of sickness might be prevented, if only greater attention were given, both by School Teachers and by parents, to the instructions, to which, a little further on, reference will be made.

Unfortunately the amount of accommodation available for isolation purposes in an ordinary cottage house is very small, not unfrequently the house is too small for the healthy requirements of the family, even when sickness is not present, so that it becomes almost impossible to prevent the spread of such a disease as Measles from one child to another. Moreover, sufficient attention is seldom given to the tedious period of convalescence, and children are allowed either to play about in the streets, or to return to their places in school, whilst in a state, which not only jeopardizes their own lives from their liability to contract cold, but also leaves them a source of danger to all with whom they are brought into contact. It was for these reasons that in the month of October I drew up the following Circular, copies of which were at once forwarded to the Managers and Teachers of all the Public Elementary Schools:—

CORPORATION OF PRESTON,

Sanitary Department.

Numerous cases having been observed in which Children have attended School whilst suffering from Sore Throat, in the first stage of Scarlet Fever, or from Desquamation, (Peeling of the Skin), in the later stage, School Managers and Teachers are urgently requested to exclude from attendance at School not only Children presenting the above, or other, suspicious symptoms, but also those of the same family, or residing at the same address. The return to School of such Children should only be allowed upon production of a Medical Certificate stating their freedom from infection.

H. O. Pilkington,
Medical Officer of Health.

This was followed in December by another Circular, dealing more especially with the period of Quarantine, which, printed in the form of a card, was issued to the various Teachers, with a request that it might be hung for reference on the School walls:—

CORPORATION OF PRESTON.

SANITARY AUTHORITY.

With a view to prevent and check the spread of Infectious Disease in the Public Schools, the following points with regard to the duration of infection in the different forms of Infectious Disease, and the period of Quarantine which should be observed, are submitted to the notice of School Managers and Teachers.

In the case of sickness from **Small Pox, Scarlet Fever, Diphtheria,** and **Whooping Cough,** the child should not be readmitted for six weeks, and only then if there is no Cough, Eruption, or Peeling of the Skin.

In **Measles, German Measles,** and **Mumps** a period of three weeks will suffice, under the same conditions.

Where a child has not itself been ill, but has been exposed to infection, a clear fortnight should elapse before its return to School, and this should only then be allowed if it has continued in good health during the period of observation.

H. O. PILKINGTON,
December, 1899. Medical Officer of Health.

Reference has been made to the Hospital Accommodation provided for Small Pox, and it may not be out of place to speak here of that available for dealing with cases of other Infectious Disease. The arrangement entered into many years ago between The Sanitary Authority and The Trustees of the Royal Infirmary, by which, upon a certain fixed payment, cases of Scarlet Fever, Typhoid Fever, or Diphtheria, could be sent into the Harris Infectious Hospital, has at times proved of the greatest service, while, so far as the town is concerned, it has certainly been an economical one. But the accommodation provided in the first instance was but limited, and this has been still further reduced by the conversion of the largest block into a Children's Ward; whilst at times, during the process of cleaning, alteration, or repair, some of the other blocks have been closed. During the past year, at the request of the patients, or their friends, and with the approval of the Medical Attendants, I sent in some 24 cases of Infectious Disease; and this number would on several occasions have been increased, had it not been that there was a want of accommodation, for the reasons just stated. The subject of the erection of an Isolation Hospital has at different times occupied the attention of your Committee, and during the past year the matter has been considerably advanced by the appointment of a Sub-Committee to consider the question and report upon it.

Such a building has become a recognised necessity in the Sanitary Equipment of every large town and rural district, and throughout the country much has of late been done, and is at present being done, in this direction.

But the subject, from its very importance, requires most careful consideration and cautious treatment. At the outset two great difficulties present themselves, first, that of obtaining a suitable site, secondly, the cost necessarily involved in the erection and maintenance of such a building.

As regards the site, this must, of course, be removed at a considerable distance from inhabited dwellings, but must yet be approachable by good roads, and not be at a prohibitive distance from the town, whose needs the Hospital is intended to supply. It must also be of an area, not only sufficient to allow of abundant airspace around the buildings which it is proposed to erect at the present time, but also to admit of those extensions which the growing demands of the town will probably call for in the future. Suitable soil, facilities for efficient drainage and water supply, height of level, and aspect, are all matters for serious thought and attention, since the building, when erected, should combine all the advantages, both as regards situation and construction, which can be gathered from the experience of other towns, which, either with failure or success, have already struck out in this direction.

As regards the expenditure, this must needs be considerable, not only in the first instance for the building and equipment of the Institution, but afterwards for its maintenance in constant working order; since although it will not be necessary to keep the staff at its full strength, a certain number of officers must always be on hand in order that there may be no delay in the admission of suitable patients.

One great advantage of such an Institution consists in the opportunity which it affords for the immediate removal and isolation of the first cases of any infectious disease, and the possibility of thus cutting short what might otherwise develope into a serious and protracted outbreak. But while such an Isolation Hospital might be the means of saving the Town a considerable amount of sickness, and even mortality, and while it may be looked upon as a necessity of the present day, it should also be thoroughly understood that it cannot be had for nothing, and that its erection must be followed by increased expense.

Whooping Cough caused a mortality slightly above the average of former years, the deaths numbering 53, all of which were under the age of 10 years.

The first and second quarters of the year were those in which the greatest mortality was recorded, and Park and Fishwick Wards were the districts which in this respect suffered the most severely.

Croup was registered as the cause of 33 deaths, of which all, with two exceptions, were those of Infants or young Children under the age of five years.

Diarrhœa as usual contributed largely to the mortality for the year, 298 deaths having resulted from the diseases which may fairly be grouped under this heading. Of these 245 occurred in Infants, 35 in young Children between the ages of 1 and 2 years, and 6 in Children somewhat older, leaving only 13 to be distributed amongst Adults whose ages varied from 25 to 80 years.

As might be expected from the ages, and in accordance with the experience of former years, nearly the whole of this heavy mortality may be classified as Summer Diarrhœa, almost all the deaths being registered between the end of July and the beginning of October.

It was not indeed until about the last week of July that there was any evidence of the approach of a Diarrhœal epidemic, but the sickness and consequent mortality continued uninterruptedly during the following two months. During the last two or three weeks of August, and the first fortnight of September the outbreak was at its height, and during the five weeks ending September 19th, no less than 181 deaths were ascribed to this cause alone, of which 151 were those of Infants, 21 more in Children under the age of 2 years, and 10 in Children somewhat older, or in adults. The worst week was that ending September 2nd, when the Diarrhœal deaths amounted to 51, a number probably greater than has been recorded from the same cause in any one previous week.

Towards the close of September the excessive mortality began to abate, but numerous deaths were registered until the middle of October when the epidemic was practically at an end.

In dealing with this subject, there is little to be said which has not already been dealt with in previous Reports, since year by year the same causes are at work to produce the outbreak; its duration and severity being mainly controlled by the state of the weather and temperature, although it is satisfactory to think that—if even to a less extent—it has in some degree been influenced by sanitary improvement and reform.

I need only refer to the appended Chart to again show how the rise in the Mortality follows upon the registration of 56 degrees of an earth temperature, taken at a depth of four feet below the surface of the ground, how the greatest number of deaths coincides—allowing an interval of 7 or 8 days—with the maximum temperature, and how as the latter falls below the fatal point, there is a corresponding subsidence in the Diarrhœal epidemic.

But the effects coincident with this rise of ground temperature are not equally apparent in all parts of the town, or amongst all classes of the community.

The better the class of houses, the greater the surrounding air space, and the less dense the population, and there the less frequent will be the appearance of the disease, and the less fatal its results.

It is popularly supposed that the eating of fruit—especially of unsound fruit—during the Summer and Autumn months is the main cause of this excessive Diarrhœa ; but, although any error of diet is at this season attended with more than ordinary danger, this theory is entirely disproved by the age period at which almost the whole of the sickness and mortality is recorded. There can, I think, be little doubt that the disease is caused by some germ given off from a polluted subsoil, a view borne out, if not initiated, by the researches commenced—although unfortunately never entirely completed—by the late Dr. Ballard, of the Local Government Board. Because it is in the very localities where this dangerous condition exists that the disease most frequently occurs, and it is amongst the Infants who from their surroundings are most exposed to attack, and who from their tender age are less capable of resisting it, that by far the greatest amount of mischief is wrought.

A certain degree of earth temperature is, as I have already said, not of itself sufficient to cause the disease, since the Children of better class people, living under more healthy conditions, escape with comparative impunity. But those who suffer—and die—are the Infants who live continually, day and night, in houses situated in crowded localities, with privies and ashpits near the back doors and windows, and with yards pebble paved, and often so imperfectly paved, as to allow of the soakage of slops, soap-suds, and other liquid impurities into the earth below the pavement, until the ground becomes a black, greasy, foul smelling substance, ready under the influence of the Summer's heat to give off germs capable of producing Diarrhœal sickness and death.

There is still however another factor wanting, to enable these unhealthy conditions to exercise their full influence in the production of disease, and it is that the Infant should be artificially fed, as is so often the case in this and similar manufacturing towns.

Because if suckled at its mother's breast, it would at any rate only be exposed to to the danger of inhaling these poisonous germs, whereas its very food becomes the vehicle by which they are conveyed into its body—a body too often already weakened and predisposed to disease. Milk is a substance especially capable of absorbing smells, and the minute particles which cause them, and in the majority of cottage houses little care is taken to protect the days supply from actual dust, dirt, or the innumerable floating impurities in the atmosphere.

Not unfrequently a still further source of peril to infantile life is to be found in the the feeding bottle, imperfectly cleansed, with tube and teat lined with sour curd, the whole forming a suitable nidus upon which the germs of disease may settle and develope.

I know that all this is in a great measure a repetition of what has been said in former Reports, but the subject is too serious, and the evil effects too pronounced, to permit of its being passed unnoticed.

Moreover additional interest and importance is given to it at the present time by the Bill which the Corporation are seeking to put before Parliament, one Clause of which would give them the power of dealing with these imperfectly paved back yards, and of requiring them to be covered with flags, concrete, or some similar impermeable material.

Such a measure, if passed, would place in the hands of the Sanitary Authority a powerful weapon wherewith to combat disease, and to reduce the death rate; while those most likely to object to it—the owners of cottage property—need not fear that it would be used unnecessarily or in an arbitrary fashion.

Indeed, as I have frequently pointed out, the first expense would be the only one, and in addition to the improvement in the property, there would be a constant saving in the cost of those repairs which under the present conditions are continually being required.

Where the surface of a yard is properly covered with flags or concrete, not only are the poisonous germs within the ground prevented from escaping, but the earth itself is saved from that pollution, without which they would have no existence. But such Sanitary conditions would have a still further effect, since habits of cleanliness would be encouraged when for the trouble of sweeping and cleaning some return could be seen and appreciated. A town cannot be rebuilt, and many of the mistakes committed in former years cannot be repaired, but a cottage house—apart from its confined situation—if provided with a well flagged yard, a water closet and ashpail, need have nothing about it offensive or dangerous to health, and under such conditions, even with a careless or dirty tenant, the health of the inmates must be proportionately improved.

From the seven diseases classed as Zymotic, those with which I have now dealt, the total death rate amounted to 3·93 per thousand, a rate which was exceeded amongst the other large towns, in Burnley, Salford, and Sheffield, was equalled in Manchester, and nearly approached in Liverpool, Hull, Nottingham, Leicester, Portsmouth, and West Ham.

But here the greater part of the rate—2·30—was due to one disease alone—Diarrhœa—in respect to which Preston occupied the worst position not only amongst the 33 large towns, but also with one exception—that of Aberdare—amongst the 67 towns which are classified as next in size and importance. And since—as already shown—this Diarrhœal mortality is almost entirely confined to very young children, it serves to prove that the Zymotic mortality, like the general death rate, is largely increased and so brought into unenviable prominence, by the heavy death rate amongst the very young, amongst infants under the age of 12 months.

And the more conclusively to show this, I deal next with those diseases which can only occur amongst the very young, I mean with Prematurity, Deficient Vitality, Marasmus, Asthenia from Birth, Convulsions connected with Teething, and various other affections which are grouped together as Diseases peculiar to Infantile life.

These were the cause of 566 deaths, and, as in the case of Diarrhœa, the great majority of these deaths—480—occurred under the age of twelve months, 51 were registered between the ages of 1 and 2 years, 25 between 2 and 5 years, and the remaining few amongst children somewhat older.

If to the above 480 deaths under 1 year, there be added those at the same age period from Diarrhœa, Bronchitis, Whooping Cough, and the other diseases generally, a total of 897 Infantile deaths will be reached, which represents 36 per cent, or more than one third of the total mortality registered at all age periods. When it is considered that of the above number, 11 died within one hour of their birth, 55 within 24 hours, and 44 within one week, whilst many of the others succumbed before attaining the age of one month, it must be recognised that while insanitary conditions undoubtedly affect the young as well as the grown up, there are in Preston a large number of children born each year that under the most favourable hygienic conditions could hardly be expected to arrive at maturity. In other words their condition is almost hopeless from the first, since they are either born prematurely, or, if at their full time, in such a state of deficient vitality, that they can hardly be said ever to have been properly alive, or else are ushered into the world with some disease which dooms them to an early death.

Many of the causes leading up to this unhappy state of things are practically beyond the control of a Sanitary Authority, and in enumerating some of them I must needs repeat what has so often been said before in dealing with the same subject.

The employment of mothers in the factory, during the period of pregnancy, and often nearly up to the time of parturition, accounts for many of the premature births; whilst their return to work within a short time after delivery must needs expose the children to all the dangers attendant upon artificial feeding, and the "nursing-out" system. But besides all this, there must be an inherent weakness in many of these infants, possibly due in some cases to the early marriage of the parents—themselves little more than boys and girls—in others not improbably a weakness inherited on both sides from long generations of workers in the cotton factories. But while the causes are many, and therefore somewhat confusing, the effects are plain and unmistakable. Out of every thousand children born during the past year, 255 failed to survive the first year of their lives, many, as I have shown, dying within a short interval after their birth. In the 33 large towns the average rate was 181 per thousand, Burnley alone exceeding us with 271; while in the 67 next largest towns the rate was 178 per thousand births, and amongst these Merthyr Tydfil alone exceeded Preston, although Aberdare, Rhondda and Longton came very near.

As already stated the causes which lead up to this heavy loss of Infantile life are numerous and varied. No doubt some of them are to be found in manufacturing towns with a staple trade like that of Preston; while others exist in disimilar towns, and even in rural districts. But probably in few other places are the whole of these causes to be found in combination, all exerting their influence to lower the standard of vitality, to produce disease, and increase mortality.

As regards remedial measures, whatever tends to improve the sanitary condition of a town must needs exercise a beneficial effect on the health of the children whose very tenderness renders them especially susceptible to the influence of their surroundings. But while much good has resulted from the labours of the Health Committee, and while still more may be expected in the future, especially with the assistance of the increased power which it is to be hoped will shortly be obtained, the greatest influence—for good or evil—will always rest in the hands of the people. It is for the parents—those who have made themselves responsible for the lives of their children—to learn the first principles of the laws of Health, and then for each, within the circle of his own household, to put them in practice.

The deaths referred to Consumption numbered 140, and as usual occurred pretty evenly throughout the year, and were distributed over all parts of the town, but were mainly confined to the ages between 15 and 40 years, many of those registered above the latter age being probably due not to Tuberculosis, but to Fibroid Phthisis.

Towards the end of the year the subjoined circular was drawn up, and distributed to households where Tubercular disease was known to be—or recently to have been—in existence. Copies were also sent to the Medical Practitioners of the town in order that, at their discretion, they might make use of them amongst the patients upon whom they were in attendance.

CORPORATION OF PRESTON.

SANITARY AUTHORITY.

TUBERCULOSIS.

Under the above heading are included all diseases caused by the Tubercle Bacillus, but the most important, and the one most generally known, is Phthisis, Consumption, or Tubercular Disease of the Lungs.

It is in the Sputum (matter coughed up and expectorated by the patient) that the seeds of infection are chiefly found, and it is therefore essential that this should be as far as possible rendered harmless, and as quickly as possible destroyed. When the Sputum becomes dry, the germs are readily diffused through the air, and so carried into the bodies of healthy persons. For this reason the patient should never spit upon the floor, but the expectoration should be received into a proper cup, or other receptacle; and in order to destroy the active power of the germs, the vessel should contain a little water mixed with some disinfectant, and should also be frequently cleansed with boiling water.

In place of handkerchiefs the patient should use pieces of rag which can be at once destroyed by burning.

With ordinary precautions there need be little danger from associating with those afflicted with Consumption, but undoubtedly danger does result from sleeping in a close ill-ventilated room with a Phthisical patient, especially if the already impure atmosphere is allowed to become fouled with particles of dried sputum—the the chief source of infection.

Fresh air and sunlight are necessary both for the patient's recovery, and for the protection of those in contact with him.

A room used for any length of time by a Consumptive patient should be thoroughly disinfected before being occupied by others.

Upon application to the Sanitary Office, this disinfection will be gratuitously carried out.

H. O. PILKINGTON,
Medical Officer of Health.

December, 1899.

Whatever good results may follow the classification of Consumption amongst the Infectious Diseases, and the consequent efforts made to prevent its transmission from one person to another, I hold that the most reliable remedy lies in the improvement in the physique, habits and environments of the people.

Houses situated on well drained sites, with free access of air and sunlight, work-shops, living rooms, and bedrooms well ventilated and not overcrowded, regular meals of suitable food, and temperance in all things, are the best means for preventing the production and propagation of Tuberculous Diseases.

But since the Bacilli of Tuberculosis are present in enormous quantities in the expectoration of a patient, there is a danger that if this be deposited carelessly, and in an undisinfected condition, on the floor of a house, it may, when dried, be conveyed either by the air, or the food on which it may settle, into the bodies of those, who either through hereditary tendency, weakness, or disease, are in a fitting condition to receive and develop the germs which it contains. Ordinary cleanliness alone demands that some such proceeding as that described in the above circular should be carried out.

It is also very advisable that a house, or more especially any particular room, that has been for any length of time tenanted by a consumptive patient, should be thoroughly disinfected and cleansed before occupation by another person. Such disinfection will be gratuitously carried out upon application at the Sanitary Offices, although it is advisable that the application should be confirmed by a Medical Certificate as to its necessity.

The inclusion of Tuberculosis amongst those Infectious Diseases, concerning which compulsory notification is in force, has been advocated by some authorities, but the great difference in the period of infectivity is, amongst other reasons, a strong argument against this course, and certainly at the present time such a procedure is impossible. In some parts special Sanatoria have been founded for the treatment of Consumption cases, and since in such Institutions the patient will have the benefit of cleanliness, proper and abundant food, fresh air and sunlight—the very things most opposed to the growth of the microbes of Tuberculosis—they must do good by retarding the progress of the disease, and even in some instances may effect a cure. But the disease is very widely spread, and since admission into Sanatoria is beyond the reach of the great majority of those affected, it cannot be too widely known that damp, dark houses, close overcrowded bedrooms, dirt and intemperance are the conditions most likely to accelerate the disease, and to imperil the safety of those in attendance upon, or even in close contact with, a Consumptive patient.

Bronchitis, Inflammation of the Lungs, and similar diseases affecting the organs of respiration, accounted for 451 deaths, of which by far the greatest number occurred either amongst the very young, or amongst persons beyond middle age, or far advanced in years.

The greatest mortality was in the last two months of the year, but the cold temperature which marked the first fortnight of March was accompanied by a rise in the mortality from this class of disease.

Influenza, which seems now to have become a regular yearly visitor was the direct cause of 31 deaths, but there is no doubt that many of those attributed to the class of disease last mentioned first commenced with Influenza, and then through exposure to cold on the part of the patient during the treacherous period of convalescence, afterwards developed into some more serious affection of the Lungs or air passages.

To old age, as meaning a natural decay of vital force, unaccompanied by any definite disease, a total of 99 deaths was attributed, of which number something like one half were registered over the age of 80 years.

Violence, including Suicide, and the various forms of accident, occasioned 64 deaths, a number rather in excess of the average of former years.

The remainder of the mortality was the result of causes other than those with which I have specially dealt, and these grouped together as "Other Diseases" occasioned 663 deaths, a number very much in accord with the average of past years.

The total number of deaths registered from all causes, and throughout the year, was 2492, so that the rate of mortality was equal to 21·18 to each thousand of the population.

In the different Wards the death rate for the year varied from 22·32 in St John's, to 17·40 in Christ Church, Park and Fishwick being almost equal with respective rates of 21·85 and 21·53, while St Peter's occupied a middle place with 19·92, and Maudland, with a rate of 17·92, took the second best position. But since the Census is only taken every ten years, and the time is drawing near when it will again have to be made, it becomes a question of some doubt as to whether or not the population of the whole town is correctly estimated, and still more a matter of uncertainty as to its being correctly apportioned amongst the different Wards.

Probably before long the Census will be made at intervals not exceeding five years, and the Statistics of this, as of other towns, will be proportionately more correct and reliable.

The Births for the year numbered 3,492, so that the rate was equal to 29·68 per thousand; while the natural increase, represented by the excess of Births over Deaths, amounted to exactly 1,000 lives.

For some years past the gradual but steady diminution of the Birth Rate throughout the Country has been commented upon; but, so far as Preston is concerned, that for the past year of 1899 is the lowest for which returns are available.

Table No 13 will, amongst other matters, show the steady decline which has taken place in this respect.

It is difficult to assign a satisfactory cause for this reduction, though it is quite possible that, in part at any rate, it is attributable to the pernicious teaching which as literature, and in other forms, has of late years invaded the country.

As will be seen from Table No. 11, a satisfactory amount of sanitary work was got through during the year, but, in addition to that which admits of tabulation, much has been done, having a direct bearing upon the health of the town, by tact, persuasion, and without recourse to formal procedure.

The scavenging of the town does not come directly under the control of your Committee, but since it is a matter of such paramount importance, I would respectfully ask the assistance of that body—The Streets and Buildings Commitee—which has the direction and management of it. It is a subject which year by year demands greater attention, and one which, if efficiently carried out, must be accompanied with increased expense. Because what satisfied Sanitary requirements even a few years ago will not suffice in the present day. Streets must be better and more frequently swept, house refuse more regularly and systematically removed.

One of the great objects aimed at in the conversion of the privy-midden system to that of water carriage consists in the prompt and effectual removal of all offensive matters from the neighbourhood of a household, and on this account the old ashpit is supplanted by the movable pail, the contents of which should be removed, at any rate, once in each week.

As these gradually increase in number, so the number of horses, carts, and men employed in the work of removal must also increase, and this must needs involve greater expenditure, but surely the money is well laid out which brings greater comfort and better health to the inhabitants of a town. The good work and Sanitary reform commenced by your Committee would fail in its object, if not supported and carried to a successful conclusion by the important Committee which has to deal with the subsequent working details.

In the same way the Committee which has charge of the improvement of a town is capable of exercising a vast influence over the Sanitation of that town.

In former days the great object aimed at would seem to have been the crowding of as much building as possible over a given area of ground, without regard to the admission of sunlight and fresh air, and without due allowance being made for the possibility of other buildings being erected in the immediate neighbourhood.

These are some of the evils with which your Committee have in the present day to deal, and in dealing with which they can receive most valuable assistance from the Town

Improvement Committee, since the latter have the power to purchase and pull down insanitary property, and then either utilize the ground for modern buildings, or else—and this is the preferable but more expensive plan—leave the ground vacant as a breathing space. And these open spaces—however limited in extent they may be—effect a marked improvement in the appearance and general character of a district, and the more crowded and densely populated such a district was before, the greater the contrast, and the more marked are the subsequent advantages.

Notices have been served for the conversion of 356 privies into waterclosets, although in several other instances the same improvement has been voluntarily carried out by various property owners at the request, and upon the advice, of the Sanitary Department.

Year by year, and in all large towns, the water carriage system is being accepted as the best method for the disposal of excreta, but few towns have the advantages which Preston possesses in the extent, situation, and suitability of its sewage farm. And while the town is exceptionally fortunate in this respect, the Committee which has charge of the farm and of the sewage disposal, must be congratulated upon the success which has attended their labours, upon the method which they have adopted, and upon the marked improvement in the land under their control.

In dealing with insanitary property, 35 houses and 20 cellar dwellings have been closed as being unfit for human habitation. In addition to this, notices have been served in the case of 21 back to back houses, requiring them to be opened through, and so converted into single dwellings with efficient ventilation.

Although the number both of cellars and of back to back houses within the Borough has of late years been greatly reduced, there are still some remaining to which before long I hope to direct the attention of your Committee. Many of these dwellings have so far been allowed to remain, either because they were tenanted by elderly couples, or on account of their being kept in a clean condition and in a state of good repair. But much of this property is already old, and is gradually but steadily deteriorating, and on this account, and in accordance with the demands of sanitary progress, the time for its closure is near at hand.

In dealing with cases of Infectious Disease the usual fumigation of the houses and disinfection of bedding, &c., has been carried out, but as an additional precaution in cases of Typhoid Fever occurring in houses which have only the ordinary privy and ashpit, I have adopted the plan of supplying a metal pail, with hermetically sealed lid, for the reception of the infected excreta.

It is chiefly in the bowel discharges from a Typhoid Fever patient that the germs of the disease exist, and there was consequently a danger in their being thrown into the ashpit, especially when this was used in common by two adjoining houses.

The pails containing the excreta, freely mixed at the time with disinfectants, are collected every second day, and the contents are removed to the Destructor where, after being mixed with sawdust and paraffin oil, they are destroyed by burning.

Under the Food and Drugs Adulteration Act, 118 samples of Milk, Butter and other articles in common use were purchased and submitted for analysis. The results of the examination are set forth in Table No. 6, and from these it will be seen that in 4 instances only was it deemed necessary to take action against the vendor. Two of these were for the sale of adulterated Butter, and though there may seem to be a great discrepancy between the amount of the fine inflicted in the two cases—viz., 2/6 and £5—still the attendant circumstances were such as justified the Magistrates in making a well marked distinction.

Out of 43 samples of New Milk, four were found to be below the required standard. One of these which showed a slight excess of water was overlooked, in two others it was deemed sufficient that the vendor should receive a cautionary letter, whilst in the case of the fourth, where evidently a considerable proportion of the cream had been abstracted, legal proceedings were taken, and a fine of 20/- and costs was imposed. In two cases Coffee was sold without a notification that it was mixed with Chicory, and in one where the adulteration amounted to 65 per cent., a summons was taken out, and a fine of 5/- and costs obtained; in the other, where the amount of added Chicory was very much less, it was thought inadvisable to take further proceedings.

With the commencement of the present year of 1900, the Food and Drugs Adulteration Act of 1899 comes into force. This contains certain fresh clauses of interest and importance both to purchasers and sellers. Vehicles or receptacles from which milk is sold in any public place must be named, and tins containing separated, condensed, or skimmed milk, must be properly labelled, as also must those containing any substance of the nature of a mixture. Margarine Cheese is defined, and the same form of labelling is required as in the case of Margarine. When sold by retail it must be enclosed in a paper wrapper on which the name Margarine Cheese is clearly and distinctly printed in capital block letters at least half an inch in length. The dividing of a sample, when purchased, into three parts, is now rendered obligatory, although the vendor is not required to accept one-third part. The amount of the penalties, which may be inflicted are defined, and while proceedings must be taken within 28 days of the time of purchase, there is a provision that a summons shall not be returnable within less than 14 days from the time of service, and that it shall state the name of the prosecutor, and also enclose a copy of the Analyst's certificate. If the vendor relies for his defence upon a warrant or invoice, he must send to the purchaser a copy of such warrant or invoice within seven days after receiving his summons, and must also warn the person giving the warranty of his intention to use it. Defendant may produce a certificate from his own Analyst, but in that case the Prosecutor must be supplied with a copy three days before the summons is returnable. The Justices may, with or without the consent of either party, cause the article in dispute to be sent to the Commisioners of Inland Revenue for analysis. These are matters deserving the attention of both purchaser and seller, and although I drew attention to them towards the close of the year, I have, with a view to assist in giving them publicity, again included them in this Report.

The Common Lodging Houses have received careful attention throughout the year, and in many respects there has been an improvement in their condition. A large one has recently been opened near the lower end of Fylde Road, which will be of service to the labourers occupied at the Dock, and in the large works recently erected on the Marsh.

Houses of this class are a necessity to a certain section of the population, and it is better that they should be on a large scale, well managed, and properly fitted up with a view to the health and comfort of the inmates, than that they should consist, as so many still do, of cottage houses, more or less imperfectly adapted to the purpose for which they are used. Advantage has been taken of any change of ownership or tenancy in these houses to increase the amount of air space allotted to each occupant, and generally to improve their sanitary conditions.

In the case of one Lodging House, where certain alterations had for the time practically deprived the occupants of any closet accommodation, a Magistrate's order was obtained requiring the house to be closed until such time as the arrangements were to the satisfaction of the Sanitary Authority. This was enforced, and in consequence of delay in the execution of the required work, the house remained closed for some months.

The Canal Boats have been regularly visited, and the usual Annual Report has been forwarded to the Local Government Board. This shows that one new boat has been added during the year, so that 35 is the number at present standing upon the Register. In the course of his visits Inspector Hardman found four cases of infringement of the Regulations, but these were remedied without any necessity for legal proceedings. The general condition of the Boats was good, and it is a matter of experience that both the Canal people and those living in the Vans, which from time to time visit the town, endeavour to keep the limited space at their disposal in as bright and cleanly a condition as possible.

The Meat condemned and afterwards destroyed, amounted to 83,241 lbs. weight, considerably more than that similarly dealt with in previous years.

The whole of this was voluntarily submitted for examination, and therefore in no instance was it necessary to take further proceedings. As the amount of sickness and mortality amongst human beings is in no slight degree influenced by climate and changes of temperature, so the condition of cattle, sheep, &c., varies with different seasons.

Disease and poor condition follow upon deficient pasturage, and excessive cold or wet, and in this way the increased number of condemned carcases must to some extent be accounted for.

In my last report I expressed the hope that the unsuitable private Slaughter-houses within the Borough would shortly be abolished, but in order that there might be no doubt as to there being sufficient accommodation for the wants of the town, it was, since then, decided to extend the Public Abattoirs by duplicating the buildings already erected. This work is now approaching completion, and when finished, there will be no reason for further delay in revising the Register of Slaughter-houses, and closing all which do not comply with the stated requirements. Then—but not until then—the work which for so many years has been in hand will be brought to a satisfactory conclusion, and the town will be freed from a number of places which are not only nuisances to the neighbourhoods in which they are situated, but which from their very number prevent complete inspection, and so offer facilities for the traffic in unsound meat.

In only one case, other than those already enumerated, was it necessary to have recourse to legal proceedings. This was for the offence of keeping swine so as to cause a nuisance, but as the nuisance was abated before the time fixed for the hearing of the case, the charge was withdrawn upon payment of costs. In several other instances, where notices relating to the abatement of nuisances of various descriptions had not been attended to, further proceedings were sanctioned by your Committee, but in every instance the required work was done in time to render the issue of a summons unnecessary. It is of course, always desirable that, where a nuisance of any kind exists, the person responsible should voluntarily set matters right, or at any rate should at once comply with a notice requiring him to execute the necessary work; but where this is not done, the welfare and safety of the general public demand that the law should be put into force, rather than the interests of one individual should imperil the health of his neighbour or of the community at large.

As in former years so in the one just past, the town has had the advantage of a water-supply which repeated analysis has shown to be of pure quality and well fitted for domestic purposes; while the new reservoir at Alston not only greatly increases the storage capacity, but, with the assistance of larger mains, furnishes a more complete protection to the town in case of fire.

Further information relating to vital statistics, and to sanitary progress during the past year, will be found in the Tables, which, together with the usual Plans and Chart, are appended to this Report.

H. O. PILKINGTON,

May 10th, 1900.

MEDICAL OFFICER OF HEALTH.

PORT SANITARY.

The years work, and its results, under the Port Sanitary Authority, are summarized in Table No. 12, prepared by Inspector Baron, who continues to act as Sanitary Officer of this Department.

There has been a considerable increase in the number of Vessels, especially Steamers, entering the River or Dock, and a consequent increase in the number of inspections. It speaks well for the masters, agents, and owners of the different Vessels, that the defective conditions found upon examination, and set forth in the Table referred to, were in every instance remedied without the necessity of serving a formal notice.

The defects were of various characters, some being such as would only interfere with the comfort of the crew, while others were not unlikely to have a bad effect upon their health. Some were due to mere carelessness and so could be easily set right, but others, involving structural alterations, were of a more serious and important nature.

A careful inspection was always made in the case of the larger Vessels coming from foreign ports, but this of course was not necessary as regards the smaller craft, those which, making shorter voyages, are constantly seen in the Dock. This system of inspection, which is now established—and more or less carefully carried out—in all the Ports of the Kingdom, must in addition to the protection which it affords against the importation of infectious diseases, have a markedly beneficial effect upon the health and general well being of a large section of the community. And those most benefitted by this procedure—the occupants of the forcastle— are as a rule a class that requires advice and guidance in sanitary matters, since their constant exposure to dangers and hardships leads them to think lightly of, and even entirely to overlook, matters which by comparison may seem trivial, but which in the end may be productive of serious illness.

The appearance of the Plague at Poona and Bombay, afterwards at Alexandria, and later on still nearer home at Oporto, was naturally the cause of much anxiety, more especially at the larger Seaports, those frequented by foreign going Vessels. This disease formed an interesting subject for discussion at the Sanitary Congress held at Southampton in August last, and while it was thought, by those best able to form an opinion, that its introduction into this country was by no means improbable, there also seemed to be a reassuring belief that the means at the disposal of the various Port Authorities would be sufficient to hold it in check, and even at once to stamp it out. A Memorandum on this subject was received from The Local Government Board, and though it was unlikely that a vessel would arrive here that had had any communication with the infected Ports, still the possibility of the disease being conveyed by way of the River was not lost sight of.

No disease of an infectious nature was present on any of the Vessels arriving in the Dock, such cases of illness as came under observation being of an ordinary, and generally a trivial, character.

H. O. PILKINGTON,

May 10th, 1900. MEDICAL OFFICER OF HEALTH.

TABLE No. 1.

Number and Causes of Deaths at different Ages, for the Year ending December 31st, 1899.

Cause of Death.	Under 1 year.	1 to 2	2 to 5	5 to 10	10 to 15	15 to 25	25 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	90 to 100	Total.	Year 1898	Year 1897	Year 1896	Average for 6 years
Small Pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	. .	...	...	0·13
Fever	...	1	...	5	4	10	10	2	4	1	...	...	...	37	42	35	23	31·34
Scarlatina........................	1	1	4	5	...	...	...	...	...	...	...	...	...	11	4	5	3	6·00
Measles	8	18	13	2	...	...	...	...	...	...	...	...	...	41	1	282	3	68·00
Diarrhœa	245	35	4	1	...	...	3	1	5	3	1	...	...	298	279	294	135	238·86
Whooping Cough	30	15	7	1	...	...	...	...	...	...	...	...	...	53	48	30	39	42·87
Diphtheria	3	3	18	10	2	...	...	...	...	...	...	...	...	36	8	4	11	11·83
Croup	8	10	13	2	...	...	...	...	...	...	...	...	...	33	10	16	18	17·14
Consumption	...	1	1	3	7	26	51	27	13	10	1	...	...	140	128	151	149	149·36
Bronchitis	88	23	16	3	2	1	10	20	53	53	40	6	..	315	240	293	268	273·87
Inflammation of Lungs	29	19	13	6	1	7	17	11	11	17	4	1	...	136	120	155	177	153 63
Teething, Convulsions, Premature Births, & Debility	480	51	25	8	2	...	...	...	...	...	...	...	...	566	514	592	568	565·50
Old Age	...	...	...	...	...	...	...	...	...	10	46	42	1	99	61	104	82	85·14
Violence, &c.	3	2	8	2	...	3	10	11	12	8	3	2	...	64	49	59	51	56·86
Other Diseases	2	2	10	10	15	35	92	95	123	166	103	10	...	663	603	667	664	664·67
Total......	897	181	132	58	33	82	193	167	221	268	198	61	1	2492	2107	2687	2191	2365·20

TABLE No. 2.

Number and Causes of Deaths in each Month of the Year ending December 31st, 1899.

Cause of Death.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Small Pox	...	...	...	...	...	...	...	...	..	...	...	...	...
Fever	3	8	3	3	1	2	...	2	1	4	3	7	37
Scarlatina	...	...	...	...	...	...	2	2	1	1	...	5	11
Measles	...	..	...	...	...	1	...	...	...	...	5	35	41
Diarrhœa	2	1	2	1	1	1	21	85	158	24	2	...	298
Whooping Cough	4	9	12	9	7	5	2	1	..	3	1	...	53
Diphtheria	...	...	1	1	1	1	6	5	6	2	1	12	36
Croup	...	5	4	2	...	3	2	3	3	5	4	2	33
Consumption	16	16	10	14	10	13	6	10	9	13	7	16	140
Bronchitis	26	28	49	31	24	12	8	6	14	18	42	57	315
Inflammation of Lungs	14	17	13	9	10	8	10	3	6	10	18	18	136
Teething, Convulsions, &c.	45	62	37	50	37	36	40	45	60	47	51	56	566
Old Age	12	14	13	15	4	8	6	5	6	1	8	7	99
Violence, &c.	9	3	7	7	4	4	5	5	6	7	3	4	64
Other Diseases	52	60	66	64	63	45	48	43	49	35	54	84	663
Total	183	223	217	206	162	139	156	215	319	170	199	303	2492

TABLE No. 3.

Number and Causes of Deaths in each Ward, for the Year ending December 31st, 1899.

Wards.	Small Pox	Fever.	Scarlatina, &c.	Measles	Diarrhœa and Dysentery	Whooping Cough.	Diphtheria.	Croup.	Consumption.	Bronchitis.	Inflammation of Lungs.	Teething, Convulsions, Premature Births and Debility.	Old Age.	Violence, &c.	Other Diseases.	Total Deaths.	Rate per 1000 per annum	Total Births.	Rate per 1000 per annum	Population.
St. Peter's Ward ...	...	7	...	17	56	3	6	8	29	64	34	98	15	10	97	444	19·92	719	32·26	22281
Park Ward............	...	4	1	10	83	20	7	7	33	77	27	153	31	3	167	623	21·85	897	31·46	28509
Fishwick Ward......	...	8	3	...	64	16	8	10	31	58	31	144	15	11	127	526	21·53	773	31·64	24426
St. John's Ward ...	...	8	1	1	42	5	13	3	15	45	19	73	6	3	75	309	22·32	407	29·40	13839
Christ Church Wd.	...	2	1	5	21	5	...	2	16	35	9	50	12	8	71	237	17·40	302	22·18	13614
Maudland Ward ...	...	5	4	8	31	4	2	3	14	29	13	45	19	5	86	268	17·92	389	26·01	14953
Gaol, Infirmary, &c	...	3	1	...	1	...	...	...	2	7	3	3	1	24	40	85	...	5	...	...
Total............	...	37	11	41	298	53	36	33	140	315	136	566	99	64	663	2492	21·18	3492	29·68	117622

Death Rate per annum per 1000 of Population for the Year..... ....21·18

Average Death Rate per annum per 1000 of Population for the past six years...20·65

Do. Do. for 10 years..................22·35

Death Rate per annum, per 1,000 of Population, of Children under one year...... 7·62

Per centage of Deaths under one year to total Deaths for the Year..................35·99

Do. do. for 10 years..................35·24

TABLE No. 4.

Number of Deaths in each Ward during each Month of 1899.

WARDS.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
St. Peter's Ward...........	39	40	31	30	27	17	30	43	54	32	41	60	444
Park Ward	43	51	68	46	40	36	38	65	70	32	53	81	623
Fishwick Ward	31	43	47	50	40	30	28	44	77	51	35	50	526
St. John's Ward	15	32	25	29	21	17	23	17	52	20	23	35	309
Christ Church Ward	22	28	21	21	12	17	14	18	22	14	15	33	237
Maudland Ward	23	19	19	25	16	19	18	22	32	15	27	33	268
Gaol, Infirmary, &c.	10	10	6	5	6	3	5	6	12	6	5	11	85
Total.................	183	223	217	206	162	139	156	215	319	170	199	303	2492

TABLE No. 5.

Per Centage of Deaths from Zymotic Diseases to Sickness reported during the Year ending December 31st, 1899.

Disease.	No. of Cases Reported.	No. of Deaths.	Per Centage.
Small Pox	...	...	...
Typhoid Fever	223	37	16·59
Scarlet Fever	313	11	3·51
Diphtheria	116	36	31·03

TABLE No. 6.

Substances submitted for Analysis during the Year 1899.

Name of Article.	No. of Samples	Result.
New Milk	39	Genuine.
Butter	46	Do.
Whiskey	4	Do.
Lard	2	Do.
Cheese	1	Do.
Pepper	3	Do.
Arrowroot	4	Do.
Coffee	2	Do.
Tea	3	Do.
Butter	1	11 per cent. water, 80 per cent. fats other than butter ; Fined 2/6 and costs.
Butter	1	8 per cent. water, 65 per cent. fats other than butter ; Fined £5 and costs.
Ice Cream	1	Consists of milk, sugar, and rice, and is in a state of fermentation. It contains yeast cells, and is swarming with bacteria.
Ice Cream	1	Consists of milk, very little cream, rice, and Sugar. It contains less cream than ordinary milk, and is in a state of fermentation with yeast cells, and very numerous bacteria.
Port Wine	1	Contains 3 per cent. proof spirit, and is not wine of Oporto, but is what is known as British Port.
New Milk	1	2·4 per. cent. fat, 8·15 per cent. other solids=10·55 per cent. total solids, and that it has been slightly watered ; Cautioned by Town Clerk.
New Milk	1	2·54 per. cent. fat, 9·06 per cent. other solids=11·6 total solids, and that it is deficient in cream ; Cautioned by Town Clerk.
New Milk	1	2·23 per cent fat, 8·89 per cent. other solids=11·12 total solids and that it is deficient in cream to the extent of at least one fourth ; Summoned and fined 20/- and costs.
New Milk	1	Slightly watered, good in other respects.
Margarine	1	Sold without label ; Cautioned by Town Clerk.
Coffee	1	Upwards of 65 per cent. chicory ; Fined 5/- and costs.
Coffee	1	Upwards of 30 per cent. of chicory.
	116	Samples
	2	Private Samples.

TABLE No. 7.

Contagious Diseases (Animals) Act, 1878.

Name of Disease.	Situation of Premises.	Date of Outbreak.	Number of Diseased Animals.	Number of Healthy Animals in contact with Disease.	Slaughtered by Order.	Number of Visits.
Swine Fever.	Under Railway Arches, near Pe'wortham Bridge.	May 4th, 1899.	Thirty-one	Sixteen.	Forty-seven	Five.

TABLE No. 8.

Return of Work done by Inspector of Food and Drugs, &c., for year 1899.

Food and Drugs, Samples purchased	…… …… ……	116
Cowsheds and Dairies visited	…… …… ……	749
Slaughter-houses visited	…… …… …… ……	6408
Meat Condemned and Destroyed	… …… ……	83241 lbs.
Fish Do.	…… …… ……	21544 ,,
Fruit Do.	…… …… ……	403 ,,

TABLE No. 9.

Birth Rate, and Analysis of the Zymotic Death Rate in 33 of the largest English Towns for the year ending December 31st, 1899. Compiled from the Registrar-General's Returns.

Name of Town.	Population.	Birth Rate	Death Rate.	ZYMOTIC DEATH RATE.								Deaths under one year to 1,000 Births
				Small Pox	Meas-les.	Scarl't Fever	Diph-theria	Whooping Cough	Fever	Diarr-hœa,	Total	
London	4,546,752	29·3	19·7	0·00	0·47	0·09	0·43	0·38	0·18	0·92	2·47	168
West Ham	300,241	29·6	16·7	0·00	0·68	0·06	0·61	0·33	0·25	1·55	3·49	200
Croydon	127,759	25·1	15·0	0·00	0·14	0·02	0·13	0·31	0·07	0·88	1·56	155
Brighton	123,226	24·8	18·9	0·00	0·00	0·08	0·49	0·15	0·19	1·56	2·50	173
Portsmouth	190,741	26·1	19·7	0·00	0·27	0·11	0·63	0·32	0·39	1·75	3·49	197
Plymouth	100,637	30·9	21·7	0·00	0·11	0·03	0·20	0·51	0·07	1·01	1·93	189
Bristol	320,911	29·1	18·2	0·00	0·13	0·03	0·10	0·37	0·10	1·10	1·85	159
Cardiff	185,826	28·6	15·4	0·00	0·05	0·01	0·33	0·64	0·10	0·91	2·06	184
Swansea	103,7[illegible]2	27·7	18·1	0·00	0·14	0·10	1·36	0·27	0·08	0·70	2·67	167
Wolverhampton	88,821	35·2	21·8	0·00	0·02	0·07	0·19	0·25	0·51	1·51	2·57	185
Birmingham......	514,956	34·3	20·8	0·00	0·38	0·06	0·28	0·32	0·24	1·67	2·96	192
Norwich	113,266	29·1	17·2	0·00	0·04	0·16	0·35	0·40	0·17	1·26	2·40	179
Leicester	213,851	29·4	17·7	0·00	0·13	0·20	1·06	0·41	0·13	1·36	3·31	196
Nottingham ...	239,384	28·9	20·1	0·00	0·58	0·23	0·13	0·23	0·48	1·67	3·34	210
Derby	106,401	28·1	16·9	0·00	0·21	0·23	0·07	0·08	0·14	0·88	1·64	161
Birkenhead	115,162	29·9	19·6	0·00	0·44	0·05	0·20	0·76	0·42	0·74	2·63	188
Liverpool	634,212	35·5	26·4	0·00	0·50	0·25	0·33	0·48	0·31	1·87	3·77	198
Bolton	162,221	29·9	19·8	0·00	0·60	0·21	0·08	0·26	0·34	1·63	3·15	183
Manchester	543,902	32·6	24·6	0·00	1·29	0·08	0·15	0·41	0·14	1·83	3·93	206
Salford............	218,244	33·8	23·8	0·00	0·96	0·22	0·34	0·45	0·35	1·97	4·32	210
Oldham	150,772	24·8	20·5	0·00	0·32	0·30	0·16	0·36	0·12	0·88	2·15	198
Burnley	113,681	25·2	19·6	0·00	0·78	0·67	0·23	0·65	0·22	1·78	4·34	271
Blackburn	135,154	27·0	19·1	0·00	0·31	0·17	0·53	0·38	0·30	0·96	2·68	189
Preston	117,622	30·0	22·8	0·00	0·37	0·09	0·33	0·50	0·33	2·30	3·93	255
Huddersfield ...	103,464	24·7	16·2	0·00	0·10	0·06	0·05	0·55	0·20	0·82	1·80	152
Halifax............	97,721	23·0	18·2	0·00	0·13	0·26	0·15	0·22	0·25	0·47	1·50	158
Bradford	236,241	23·3	18·4	0·00	0·32	0·45	0·11	0·27	0·19	0·97	2·33	179
Leeds	423,889	31·9	19·3	0·00	0·37	0·15	0·77	0·38	0·16	0·94	2·78	171
Sheffield	361,169	34·5	22·1	0·00	0·61	0·25	1·27	0·15	0·51	1·58	4·39	195
Hull	234,270	34·2	19·2	0·60	0·51	0·16	0·12	0·61	0·18	1·46	3·66	175
Sunderland	145,613	35·7	21·4	0·00	0·27	0·24	0·06	0·38	0·37	1·14	2·49	175
Gateshead	106,552	36·6	18·7	0·00	0·19	0·11	0·07	0·43	0·14	1·11	2·09	179
Newcastle	228,625	31·4	20·5	0·00	0·35	0·11	0·12	0·38	0·10	0·74	1·82	193

TABLE No. 10.

Meteorological Observations for the Year ending December 31st, 1899.

Month.	Attached Thermometer.	Barometer.	Barometer corrected to 32deg. Fahr.	Hygrometer.		Temperature in Shade.		Earth Thermometer.		Mean Daily Temperature.	Humidity Saturation=100	Rainfall in inches.	Number of Deaths from	
				Dry Bulb.	Wet Bulb.	Maximum.	Minimum.	One Foot	Four Feet.				Bronchitis.	Diarrhœa.
January	41·63	29·549	29·847	41·74	42·33	46 96	38·24	42 67	45·54	42·21	91	4·29	26	2
February ...	36·13	29·647	29·772	37·28	38·49	41·87	32·92	39·07	41 85	39·24	86	0·49	28	1
March	38·68	29·935	30·113	39·88	39·01	45·90	35·82	39·65	42·42	40·49	87	3·51	49	2
April	47·06	29·561	29·684	47·28	44·92	51·42	40·06	44·81	45·21	46·07	83	3·37	30	...
May	51·91	29·898	29·975	52·88	49·49	57·31	40 91	48·16	47·85	50·63	79	2·23	20	2
June	62·46	29·862	29·911	64 05	57·78	69·95	48·78	56·70	53 92	61·05	66	1·19	13	1
July............	64·21	29·966	30·012	64·35	59 74	68·56	53·53	58·81	57·10	62·12	76	2·05	12	21
August	64·36	30 027	30·070	64·91	58·99	74·76	55·85	59·99	59·45	65·22	68	2·00	6	85
September ...	55·92	29·735	29·804	56·31	53·63	62·28	48·63	54·92	56·99	55·82	81	5·04	10	143
October	47·67	29·911	30·003	49 21	46 99	55·07	42·81	47·81	51·57	49 01	84	2·24	15	39
November ..	48·33	29·937	30·028	48·79	47 13	52·59	43·70	47·93	50·17	48·14	88	3·11	35	2
December ...	37·28	29·709	29·832	37·46	37·45	40·63	32·60	39 31	45·78	36·89	93	2·28	71	...

TABLE No. 11.

Summary of Work done during the Year ending December 31st, 1899.

	No. 1 District.	No. 2 District.	No. 3 District.	No. 4 District.	Total.
Number of Ashpails cleansed	...	...	...	...	819,871
Number of Ashpits cleansed	...	...	...	...	13,991
Number of Complaints received	543	485	425	773	2226
Inspection of Dwelling Houses	3809	3444	3704	3221	14,178
„ Cellars	346	613	259	528	1,746
„ Schools	95	163	41	156	455
„ Lodging Houses	776	527	12	56	1,371
„ Slaughter Houses	48	47	450	203	748
„ Canal Boats	...	66	...	..	66
„ Mills and Workshops	368	521	572	387	1,848
„ Bakehouses	145	264	189	120	718
„ Markets	...	252	320	115	687
„ Ashpits and Yards	4440	3575	3891	4538	16,444
„ Drains	4578	3878	3942	5217	17,615
„ Infected Houses	335	166	237	276	1,014
„ Vans and Tents	97	103	63	113	376
Circular Letters sent	46	43	24	34	147
Notices served for Slopstone Pipes	21	23	25	19	88
„ Defective Drains	248	245	284	293	1,070
„ „ Spouts	23	35	29	38	125
„ „ Water Closets	92	141	129	125	487
„ „ Privies and Ashpits	47	91	31	22	191
„ Privies converted into W.C's.	59	130	75	92	356
„ Overcrowding	...	3	...	...	3
„ Limewashing	40	124	94	38	296
„ Yard Pavement	102	88	137	61	388
„ Manure Accumulation	6	12	11	4	33
„ Stagnant Water	...	37	16	29	82
„ General Nuisances	41	48	37	55	181
„ to Convert Back to Back Houses	...	21	...	...	21
„ Close Cellar Dwellings	...	...	...	20	20
„ Close Houses	6	20	9	...	35
„ Sewer, Level, Pave, &c.	133	439	146	99	817
Smoke Observations	3	...	6	3	12
Animals Removed	19	13	12	15	59
Houses Fumigated	232	131	130	136	629
Schools Fumigated	1	...	1	1	3
Bedding Disinfected	47	17	19	58	141
Drains Tested	25	29	35	31	120
Re-Inspections	1891	2160	2190	2139	8,380

TABLE No. 12.

Return of Port Sanitary Work for the Year ending December 31st, 1899.

Steamships Inspected		805
Sailing Ships Inspected		152
Re-Inspections		203
Condition of Vessels examined	Good	767
	Defective	190

Defective conditions remedied :—

Paints stored in Forecastle	5
Forecastle Deck Leaking	4
Do. Dirty	56
Do. Required Painting	32
Do. Ventilation and Light Defective	9
Defective Ventilation of Privies and Water Closets	18
Foul and Defective Do. Do.	39
Defective Water Casks replaced with Iron Tanks	2
Foul Water Casks and Tanks	37
Provision Lockers not Ventilated	4
Dirty Provision Lockers	22
Foul Bilges	14
,, Peaks	3
,, Chain Lockers under Forecastle	18

TABLE No. 13.

The estimated Population, Number of Births and Deaths, Rates per thousand, and natural increase in the Borough, for each year since 1841.

Years.	Estimated Population	No of Deaths.	Death Rate per 1000.	No. of Births.	Birth Rate per 1000.	Natural Increase
1841	51.000	1508	2957	1974	38·70	466
1842	52 840	1550	2933	1944	36·79	394
1843	54,680	1459	26 38	1975	36·12	516
1844	56,520	1380	24 42	2200	38·92	820
1845	58,360	1635	28 01	2293	39·29	558
1846	60,200	2189	36.36	2475	41·09	286
1847	62,050	2059	33.18	2268	36·59	209
1848	63,900	1550	24.26	2223	34·79	673
1849	65,750	1751	26.63	2403	36·55	652
1850	67,000	1745	25 81	2649	39·19	904
1851	69,450	2241	32.26	2803	40·36	562
1852	70,850	2284	32.23	2998	42·31	714
1853	72,250	2346	32.47	3072	42·51	726
1854	73,600	2013	27.35	3037	41·26	1024
1855	75,000	2557	34.10	3071	40·95	514
1856	76,400	2251	29.46	3151	41·24	900
1857	77,800	2131	27.39	3286	42·24	1155
1858	79,200	2545	32 13	3082	38.91	537
1859	80,600	2111	26 19	3399	42.17	1288
1860	82,000	2236	27·27	3381	41.23	1145
1861	82,985	2585	31.15	3626	43.69	1041
1862	83,231	2411	28 97	3522	42.32	1111
1863	83,477	2142	25.66	3388	40.57	1246
1864	83,686	2432	29 06	3422	40.89	990
1865	83,932	2708	32 26	3338	39.77	630
1866	84,178	2854	33.90	3535	41.99	681
1867	84,424	2608	30.89	3732	44.20	1124
1868	84,670	2798	33.04	3710	43.82	912
1869	84,916	2248	26.47	3434	40·44	1186
1870	85,162	2406	28.25	3486	40·93	1080
1871	85,427	2541	29.75	3438	40·24	897
1872	85,654	2294	26.78	3704	43·24	1410
1873	86,000	2899	33.71	3558	41·37	659
1874	86,000	2962	34.44	3582	41·65	620
1875	86,000	2581	30 01	3499	40·68	918
1876	86,600	2331	26.92	3623	41·84	1292
1877	87,000	2336	26·85	3601	41·39	1265
1878	87,300	2502	28·66	3697	42·35	1195
1879	87,600	2395	27·34	3403	38 83	1068
1880	88,000	2425	27·35	3475	39·49	1050
1881	96,524	2044	21·17	3489	36·14	1445
1882	97,656	2511	25·71	3785	38·76	1214
1883	98564	2345	23·79	3576	36·28	1231
1884	99 481	2540	25·53	3745	37·64	1205
1885	100,406	2563	25·52	3868	38·52	1305
1886	101,340	2769	27·32	3961	39·08	1192
1887	102,283	2703	26·42	3870	37·83	1167
1888	103,234	2326	22·53	3823	37·03	1497
1889	104,194	3019	28·97	3912	37·63	902
1890	105,163	2726	25·92	3718	35·35	992
1891	107,864	2807	26·02	3830	35·50	1023
1892	109,038	2481	22·75	3686	33·80	1205
1893	110,225	2753	24·97	3809	34·55	1056
1894	111,425	2186	19·61	3545	31·81	1359
1895	112,638	2528	22·44	3702	32·95	1174
1896	113,864	2191	19·24	3673	32·25	1482
1897	115,103	2687	23·34	3687	32·03	1000
1898	116,356	2107	18·10	3559	30·58	1452
1899	117,622	2492	21·18	3492	29·68	1000

TABLE No. 14.

Table of Deaths during the year 1899, in the Urban Sanitary District of Preston.

Classified according to DISEASES, AGES, and LOCALITIES.

Names of Localities adopted for the purpose of these Statistics; public institutions being shewn as separate localities.	Mortality from all causes at subjoined ages								Mortality from subjoined causes distinguishing deaths of children under five years of age.																					
													Fevers.																	
	At all Ages.	Under 1 year.	1 and Under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.		Small Pox.	Scarlatina.	Diphtheria.	Croup.	Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.	Cholera.	Erysipelas.	Measles.	Whooping Cough.	Diarrhœa and Dysentery.	Rheumatic Fever.	Phthisis.	Bronchitis, Pneumonia & Pleurisy	Heart Disease.	Influenza.	Injuries.	All other Diseases.	Total.
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
St. Peter's Ward.........	444	165	75	14	16	110	64	Under 5	...	...	5	8	...	1	...	..	...	...	.	17	2	54	...	1	47	...	...	3	102	240
								5 upwards	...	...	1	...	..	6	...	...	2	.	1	...	1	2	...	29	50	27	3	7	75	204
Park Ward	623	248	69	15	10	179	102	Under 5	...	...	5	7	...	...	..	...	...	...	...	9	20	81	...	..	44	1	1	...	149	317
								5 upwards	...	1	1	1	...	4	...	...	1	...	...	1	...	4	1	34	61	43	5	3	146	306
Fishwick Ward	526	211	67	19	18	142	69	Under 5	...	1	3	8	..	...	...	...	...	...	...	..	16	62	..	1	43	1	4	2	137	278
								5 upwards	...	1	5	2	..	8	...	..	1	...	1	...	...	...	3	31	47	38	6	9	95	248
St. John's Ward	309	109	43	15	12	88	42	Under 5	...	1	10	2	...	...	...	...	...	...	...	1	4	36	...	2	22	...	...	...	74	152
								5 upwards	...	...	3	1	...	8	..	...	1	...	...	...	1	6	...	14	41	23	2	3	54	157
Christ Church Ward ...	237	76	19	11	8	74	49	Under 5	...	1	...	1	...	...	...	...	...	...	...	4	6	18	..	2	11	...	1	2	49	95
								5 upwards	...	...	...	...	...	2	.	...	...	...	...	1	...	3	2	14	35	17	2	6	60	142
Maudland Ward	268	75	30	12	14	82	55	Under 5	...	3	1	3	...	...	...	...	...	...	...	7	3	29	...	1	16	...	...	1	41	105
								5 upwards	...	1	1	..	...	4	...	...	...	...	1	1	2	3	...	13	26	18	7	4	82	163
Infirmary, Gaol, &c. .	85	5	6	6	9	54	5	Under 5	...	...	...	...	...	. .	...	...	...	...	. .	...	...	...	...	...	1	...	...	2	8	11
								5 upwards	...	1	...	..	...	3	...	...	...	...	..	...	...	..	...	2	8	7		21	32	74
Total	2492	889	309	92	87	729	386	Under 5	...	6	24	29	...	1	...	...	...	...	...	38	51	280	..	7	184	2	6	10	560	1198
								5 upwards	...	4	11	4	...	35	...	..	5	.	3	3	4	19	6	137	268	173	25	53	544	1294

The subjoined numbers have also to be taken into account in judging of the above records of mortality.

	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Deaths occurring outside the district among persons belonging thereto.	181	4	1	2	5	88	81	Under 5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	5
								5 upwards	...	..	..	...	...	1	...	...	1	...	...	...	...	5	...	19	42	21	1	...	86	176
Deaths occurring within the district among persons not belonging thereto.	..	...	...	...	...	...	..	Under 5	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...
								5 upwards	...	...	...	..	..	...	...	..	...	...	...	...	...	...	...	...	...	...	...	.	...	..

TABLE 15.

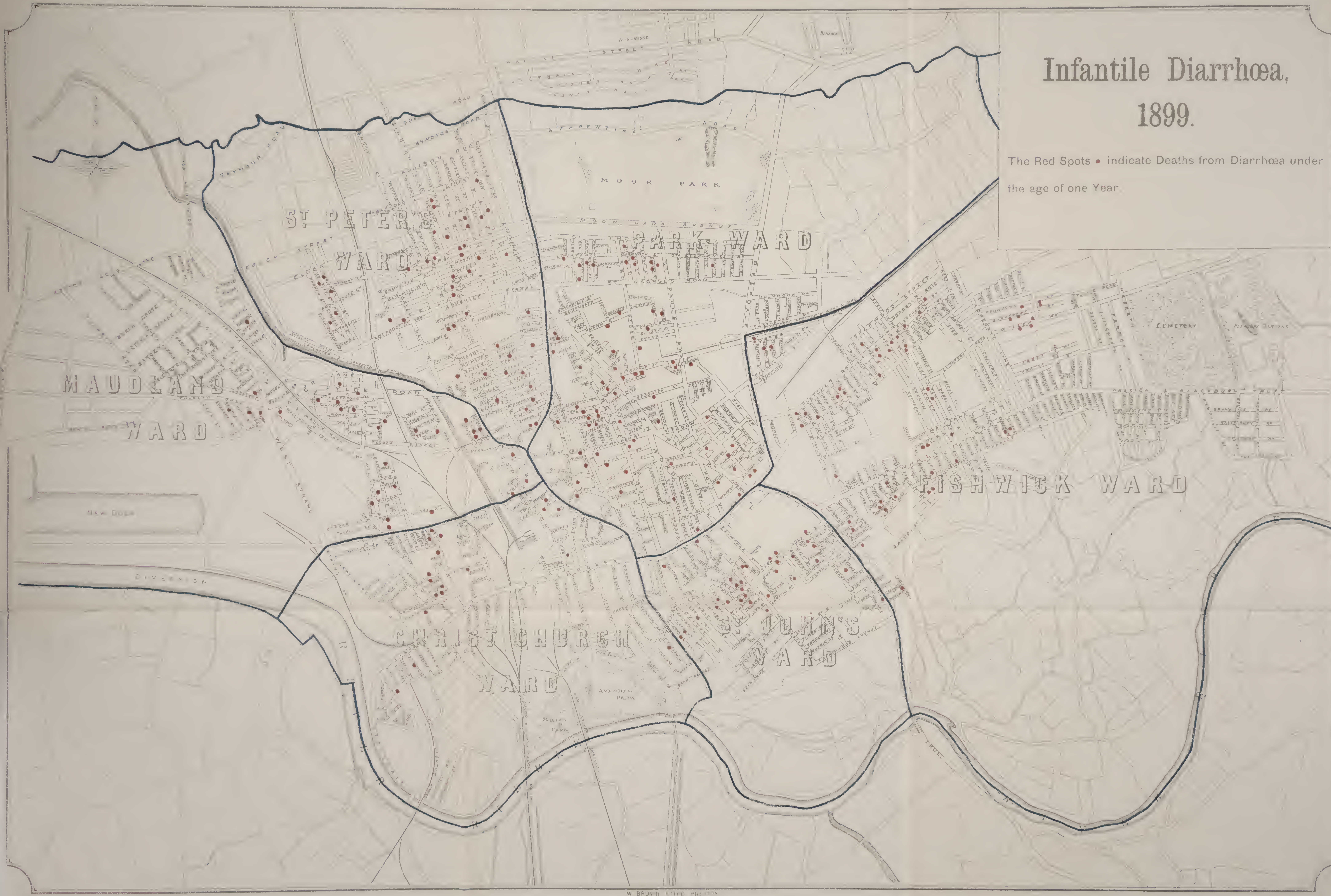
TABLE OF POPULATION, BIRTHS, AND OF NEW CASES OF INFECTIOUS SICKNESS.

Names of Localities adopted for the purpose of these statistics; public institutions being shewn as separate localities. (a)	Population at all ages.		Registered Births. (d)	Aged under 5 or over 5. (e)	New cases of sickness in each locality coming to the knowledge of the Medical Officer of Health.										Scarlet Fever removed to Hospital.	Enteric or Typhoid removed to Hospital.
	Census 1891. (b)	Estimated to middle of 1899. (c)			Small Pox. 1	Scarlatina. 2	Diphtheria. 3	Membranous Croup. 4	Fevers. Enteric or Typhoid 5	Fevers. Continued. 6	Fevers. Relapsing. 7	Fevers. Puerperal. 8	Cholera. 9	Erysipelas. 10		
St. Peter's Ward...... ..	20,145	22,281	719	Under 5	...	9	9	...	8	...	...	...	...	...	..	...
				5 upwards	...	50	7	...	25	...	...	2	...	2	4	1
Park Ward	27,892	28,509	897	Under 5	...	13	9	...	9	...	..	...	...	2	. .	...
				5 upwards	...	38	6	...	41	...	...	1	..	17	3	3
Fishwick Ward	19,782	24,426	773	Under 5	...	17	6	...	4	...	...	...	...	...	...	. .
				5 upwards	...	29	16	..	62	...	...	2	...	13	3	...
St. John's Ward	13,582	13,839	407	Under 5	...	14	22	..	5	..	...	...	...	..	...	...
				5 upwards	...	24	25	. .	21	...	.	1	...	6	3	1
Christ Church Ward ...	13,510	13,614	302	Under 5	..	14	4	...	2	...	...	...	...	...	...	...
				5 upwards	...	50	6	...	13	...	...	...	...	3	3	...
Maudland Ward	12,953	14,953	389	Under 5	...	18	3	...	1	...	.	...	..	...	.	...
				5 upwards	...	37	3	...	32	...	...	...	...	3	2	1
Royal Infirmary	...	...	5	Under 5	...	...	...	...	...	...	...	...	...	...	...	...
				5 upwards	.	...	...	...	...	...	...	...	...	...	...	...
Total............	107,864	117,622	3492	Under 5	85	53	...	29	...	...	...	...	2	...	...	...
				5 upwards	228	63	...	194	...	...	6	...	44	...	18	6

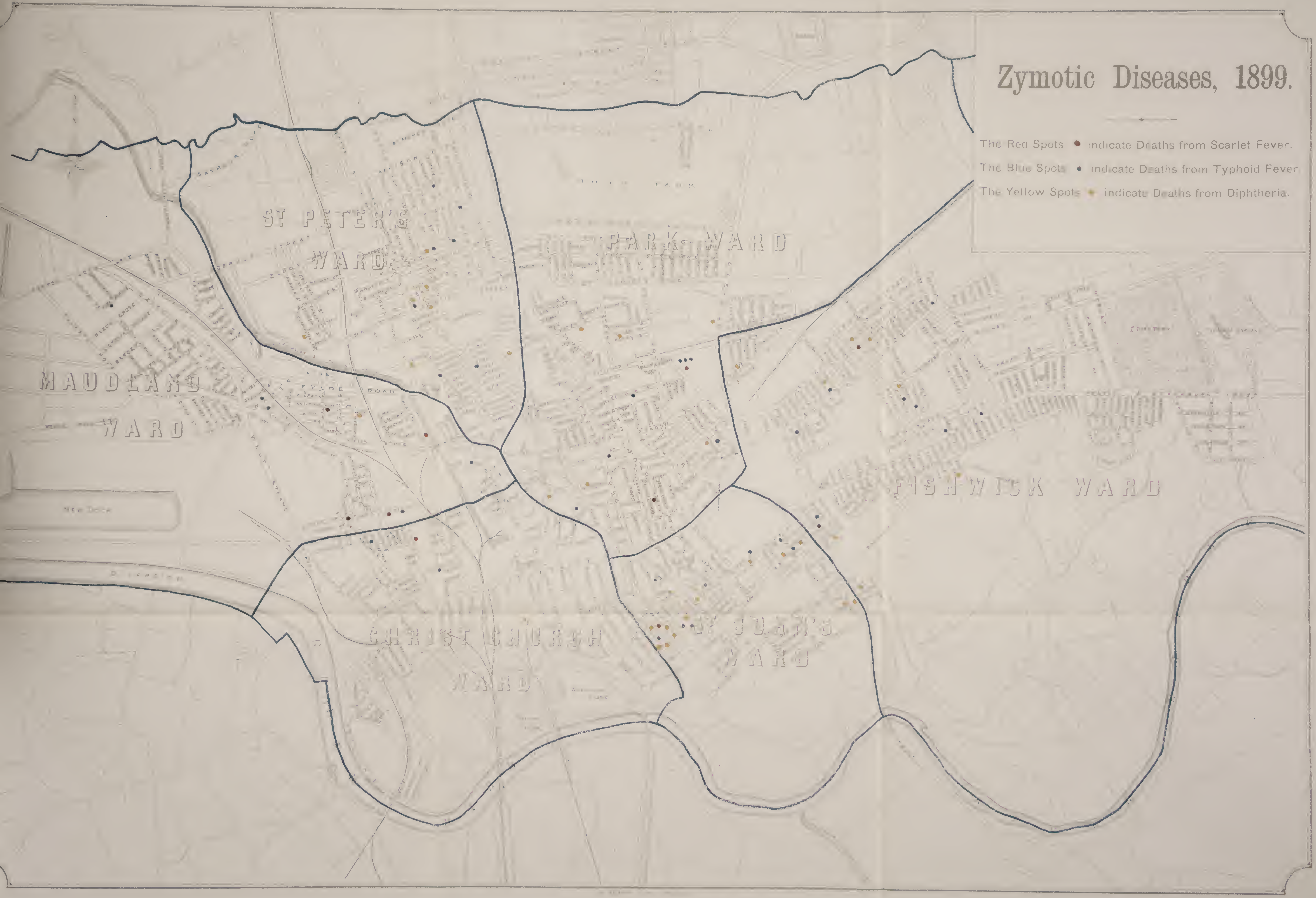
Infantile Diarrhœa,

1899.

The Red Spots ● indicate Deaths from Diarrhœa under the age of one Year.



W. BROWN LITHO PRESTON

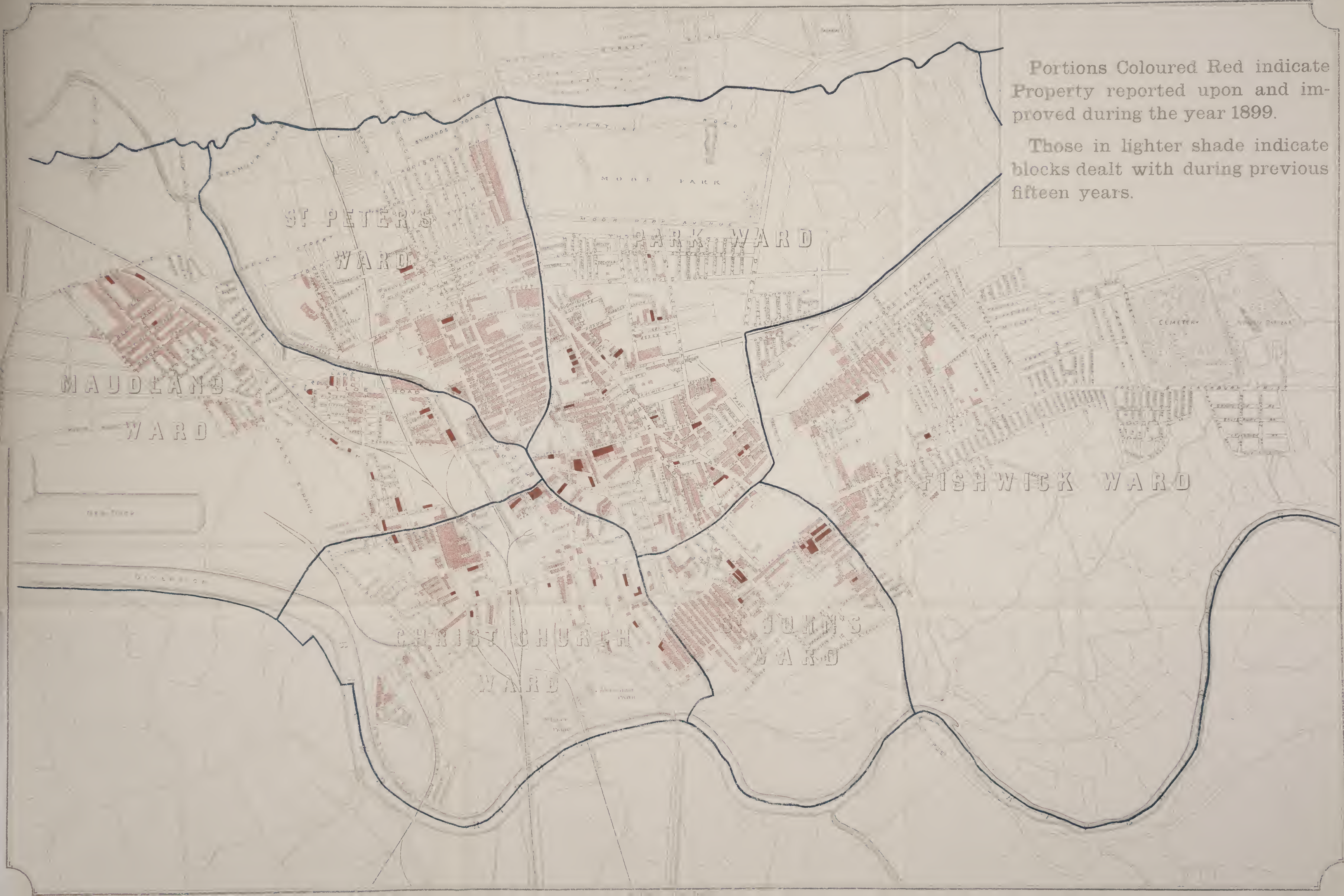


Zymotic Diseases, 1899.

The Red Spots ● indicate Deaths from Scarlet Fever.

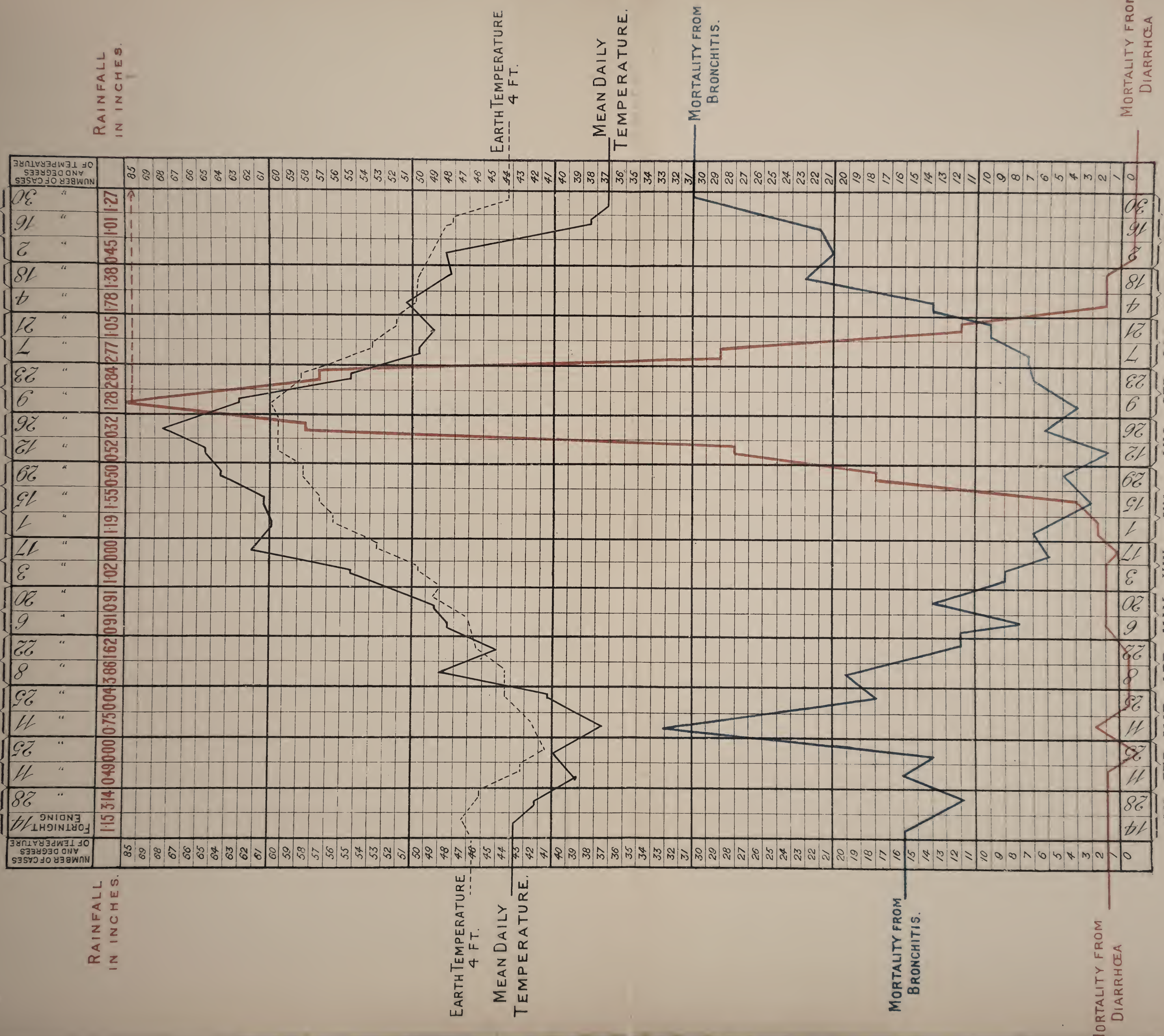
The Blue Spots ● indicate Deaths from Typhoid Fever.

The Yellow Spots ● indicate Deaths from Diphtheria.



Portions Coloured Red indicate Property reported upon and improved during the year 1899.

Those in lighter shade indicate blocks dealt with during previous fifteen years.

RAINFALL IN INCHES.
EARTH TEMPERATURE 4 FT.
MEAN DAILY TEMPERATURE.
MORTALITY FROM BRONCHITIS.
MORTALITY FROM DIARRHŒA
NUMBER OF CASES AND DEGREES OF TEMPERATURE
FORTNIGHT ENDING
JAN 14 28
FEB 11 25
MAR 11 25
APL 8 22
MAY 6 20
JUN 3 17
JUL 1 15 29
AUG 12 26
SEP 9 23
OCT 7 21
NOV 4 18
DEC 2 16 30
1·15 3·14 0·49 0·00 0·75 0·04 3·86 1·62 0·91 0·91 1·02 0·00 1·19 1·55 0·50 0·52 0·32 1·28 2·84 2·77 1·05 1·78 1·38 0·45 1·01 1·27
85 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

ROYAL STATISTICAL SOCIETY
25 JUN.1900